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SHORT REPORT

Successful Treatment of a Splenic Artery Aneurysm: a New Use for the Wallgraft™ Endoprosthesis

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Introduction

We present a patient with a splenic artery aneurysm (SAA) managed by endovascular stenting.

Case Report

A 67-year-old female presented with a change in bowel habit. CT pneumocolon identified no colonic abnormality but did demonstrate a 7 cm SAA (Fig. 1). There was no history of vascular disease or pancreatitis and no risk factors for atherosclerosis. One of her two sisters had recently died following a ruptured thoracic aortic aneurysm. The SAA was not palpable and there was no other evidence of aneurysmal disease.

Under local anaesthetic, a right common femoral artery puncture was used for selective catheterisation of the splenic artery. The diameter of, splenic artery on each side of the aneurysm was 6.5 mm (Fig. 2). With a stiff wire (Terumo) in the distal splenic artery a 10 Fr flexi-sheath was advanced #across the aneurysm. An 8 mm by 7 cm Wallgraft™ (Boston Scientific Vascular) was deployed in the distal splenic artery with subsequent angiography showing a proximal endoleak. Therefore a further 8 mm by 3 cm Wallgraft™ was deployed in the proximal splenic artery with final angiography showing no endoleak (Fig. 3). The use of two stents allowed flexibility to manage changes in anatomy during the procedure.

Because of the potential risk of rupture vascular surgical expertise was available during the procedure. The patient made an uneventful recovery. Spiral CT angiography at 24 h and 4 months demonstrated no endoleak and a normally perfused spleen (Fig. 4).

Discussion

SAA have an estimated incidence of under 1%.[1] They comprise approximately 60% of splanchnic artery aneurysms and are the third most common intra-abdominal aneurysm.[2] Females are four times more likely to have SAA[3] and they are most commonly diagnosed during pregnancy. The strong female and gestational predominance suggests that the aetiology of the disease is different to other intra-abdominal atherosclerotic aneurysms. In addition, patients with liver disease (cirrhosis and portal hypertension) are also at risk of SAA suggesting that an increased splenic artery blood flow may be significant.

Most SAAs present incidentally either on plain X-ray, during abdominal ultrasound or visceral angiography. The incidence of rupture appears low and in Trastek's series of 100 patients only four presented as ruptures. Furthermore 34 of these cases were prospectively observed for a mean of 6.4 years with only one rupturing during this period.[3] The incidental finding of a small asymptomatic SAA seen as a calcified ring in the left upper quadrant on plain X-ray is not considered an indication for angiography. The two absolute indications for treatment are rupture and anticipated pregnancy.[2]

For asymptomatic non-gestational aneurysms, the limited literature suggests that treatment should be

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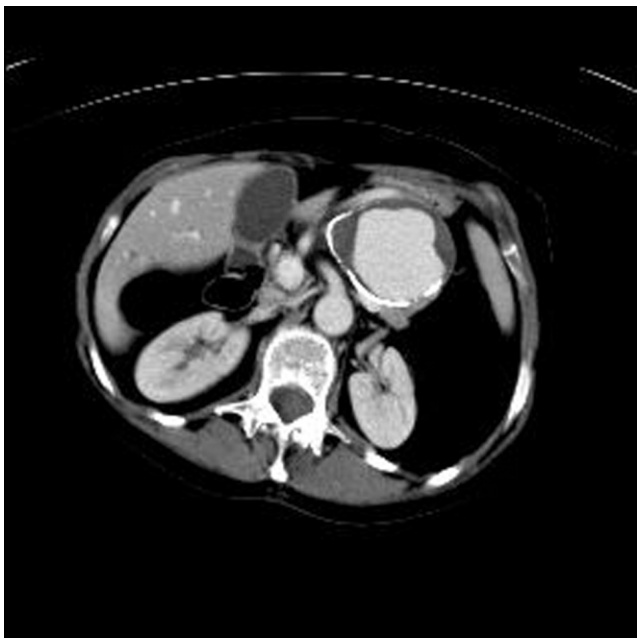

Fig. 1. CT pneumocolon demonstrating 7 cm splenic artery aneurysm.

considered for lesions greater than 2 to 3 cm in the longest dimension.[2,3] Surgical approaches vary from resection and primary anastomosis to splenectomy with or without distal pancreatectomy.

Until recently, the only treatment for SAA has been open surgery, however as SAA are often saccular, endovascular embolisation has gained popularity and

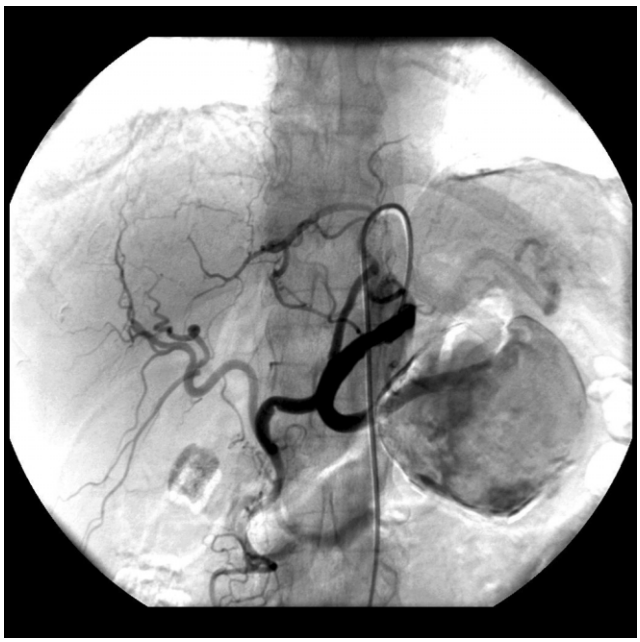

Fig. 2. Selective visceral angiogram demonstrating 7 cm splenic artery aneurysm with 6.5 mm 'necks'.

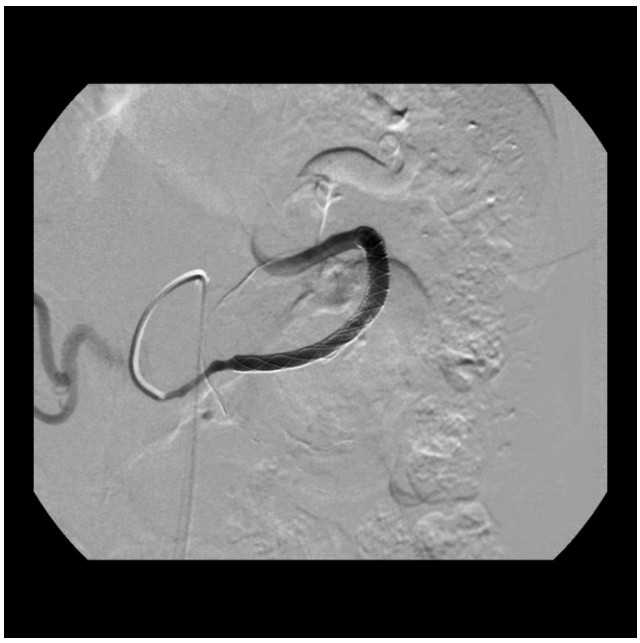

Fig. 3. Two Wallgraft™ prostheses deployed with occlusion of endoleak.

there are several reports of the success of this technique.[4] Unfortunately however, many patients experience pain and fever following embolisation, thought to be related to splenic ischaemia and the technique is only effective in up to 85% of patients.[4]

The only other reported stenting of a SAA was with the Jostent prosthesis (Jomed, Germany). In this case

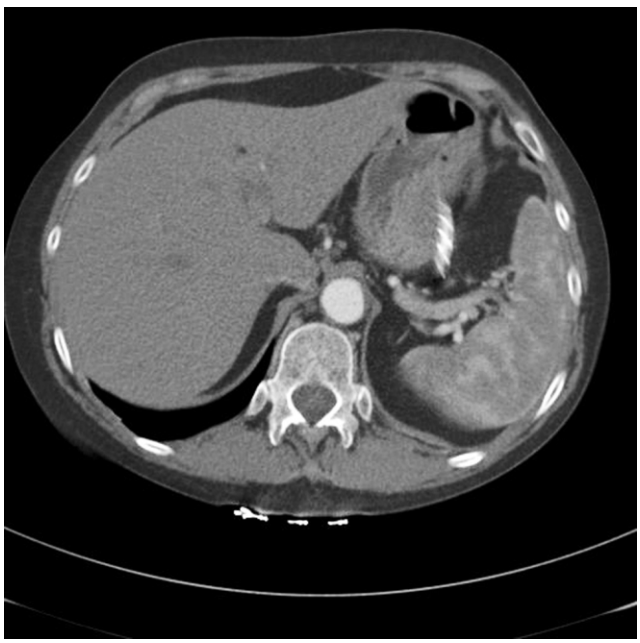

Fig. 4. Spiral CT angiogram demonstrating well perfused spleen, satisfactory position of grafts with no endoleak at 4 months.

the broad based neck was occluded with a series of three overlapping stents.[5] The Wallgraft™ endoprosthesis has been deployed successfully in iliac and popliteal arteries and was considered suitable for use in this patient. It allowed rapid occlusion of the aneurysm sac and the patient required only 24 h inpatient stay. To the best of our knowledge this is the first successful use of a Wallgraft™ endoprosthesis to occlude a splanchnic artery aneurysm. This case further illustrates the range of conditions amenable to endovascular stenting as a result of the availability of high quality, low profile interventional devices.

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